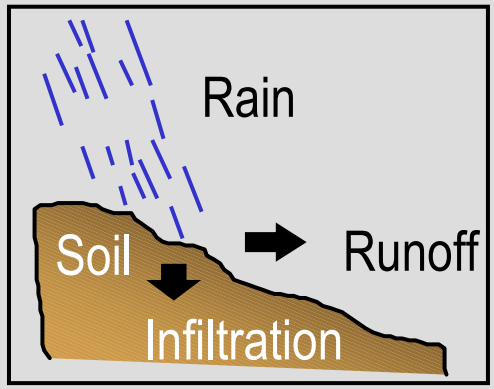
“Helping People Understand Soils”

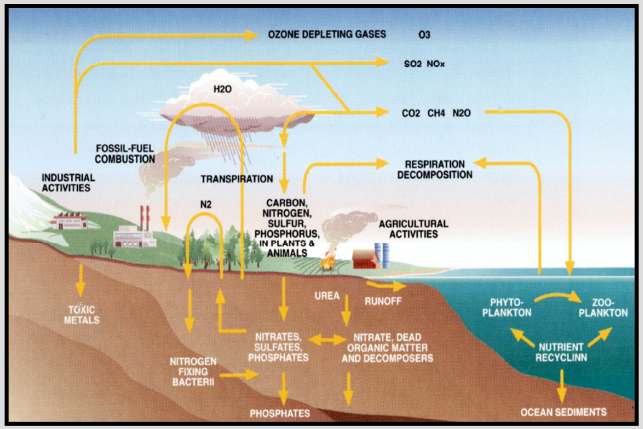
Ten Ke Me age

Soils Perform Vital Functions

S aining plan and animal li e below and abo e he ace

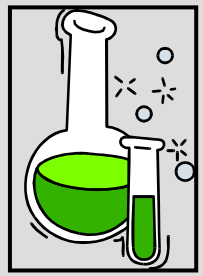
Reg la ing and pa i ioning wa e and ol e low





Fil e ing, b e ing, deg ading, immobili ing, and de oxi ing

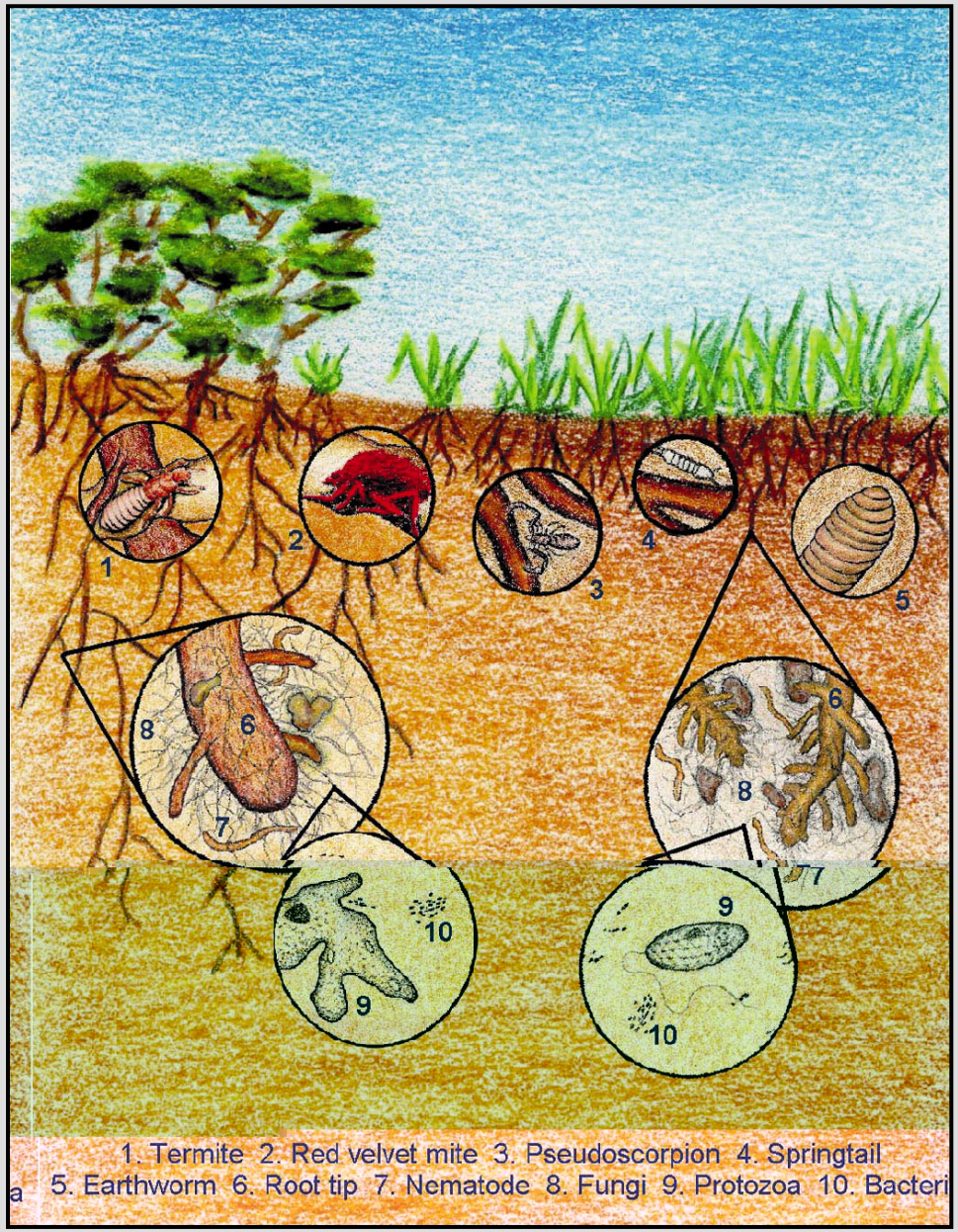
S o ing and c cling n ien



P o iding ppo o c e

Soil is the Basis of the Ecosystem

The li ing em
occ ing abo e and
below he g o nd
ace a e de e mined
b he p ope ie o he
oil. We o en igno e he
oil beca e i i ha d o
ob e e.



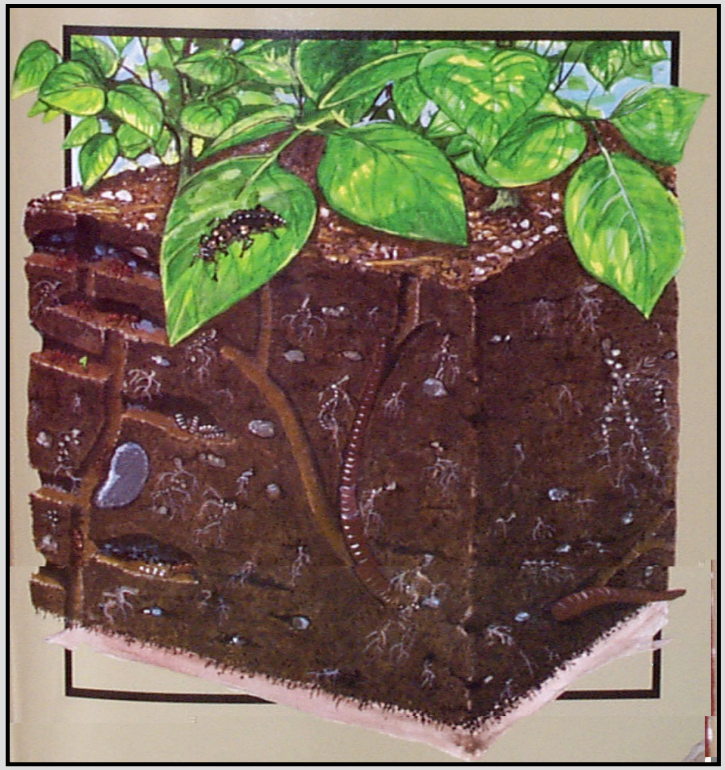
Soils Support Life

Organism Type

bacteria
fungi
protozoa
nematodes
arthropods
earthworms

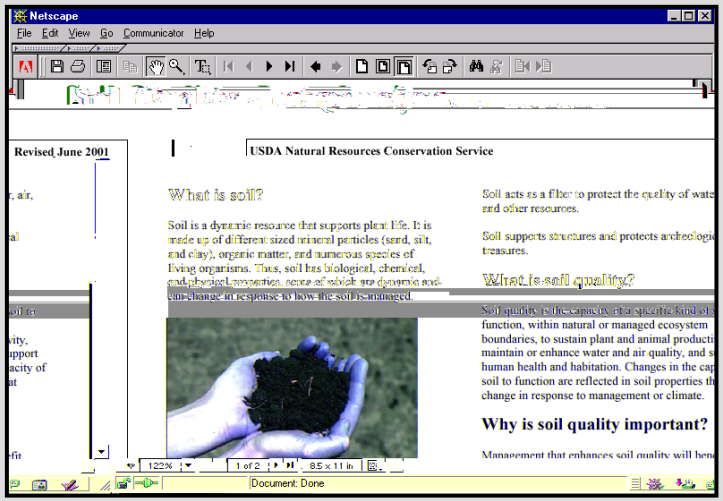
Role & Benefit

decomposition
release nutrients
create pores
stabilize soils



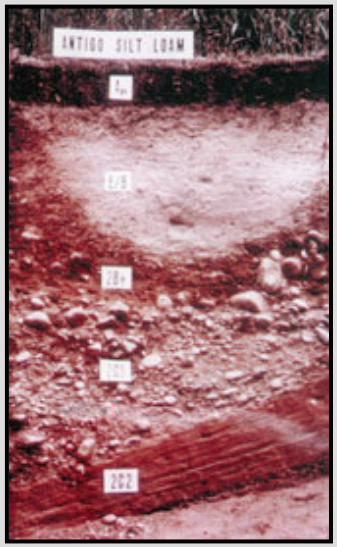
Soil Management Affects Soil Quality

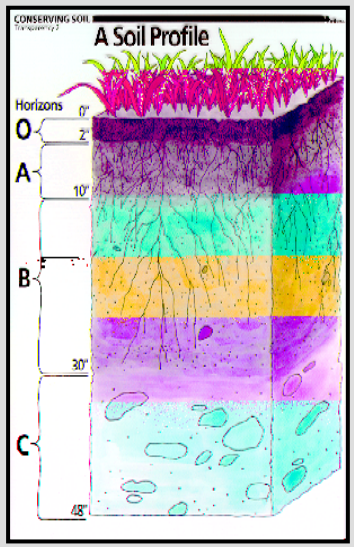
Soil Q ali



Soils Have Unique Physical, Chemical, and Biological Properties Important to Their Use

colo
ex e
c e
con i ence
oo
po e
o he ea e





Soil i a na al bod o olid , liq id, and ga e , wi h ei he ho i on , o la e o he abili o ppo oo ed plan .

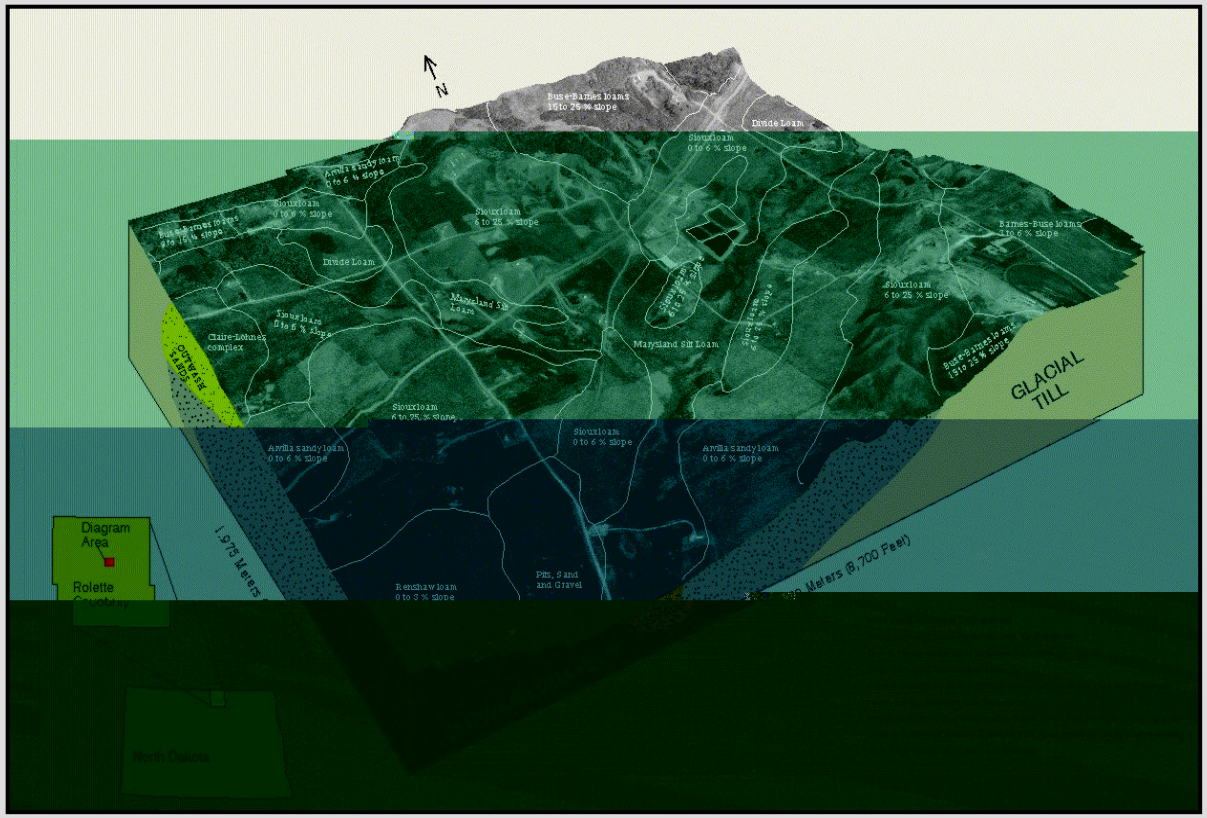
Pedolog , he d o oil, i a niq e di cipline.

Soil-Forming Factors Determine the Location and Kind of Soil

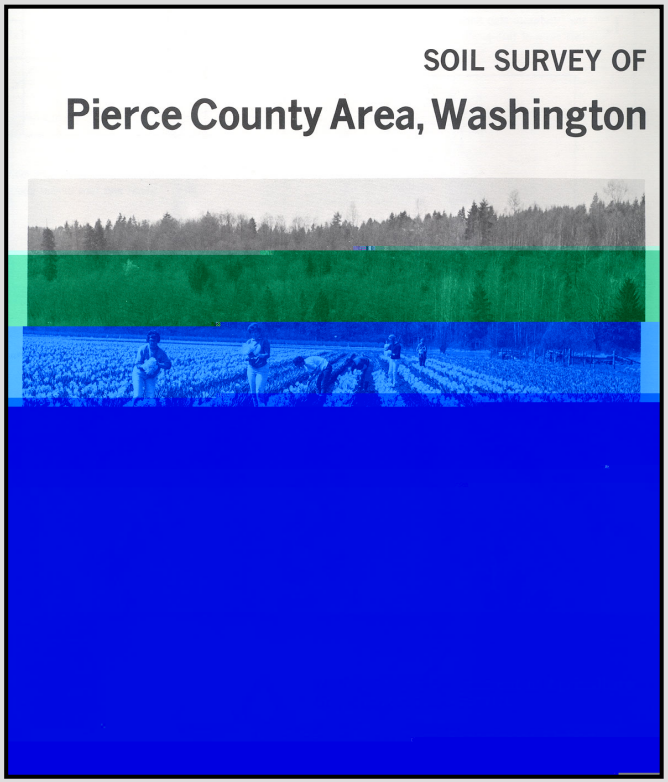
The e a e 23,000 oil e ie in a io combina ion wi h di e en lope and ace ex e in he U.S.

Soil Fo ming Fac o :

Pa en Ma e ial
Clima e
Li ing O gani m
Topog aph
Time

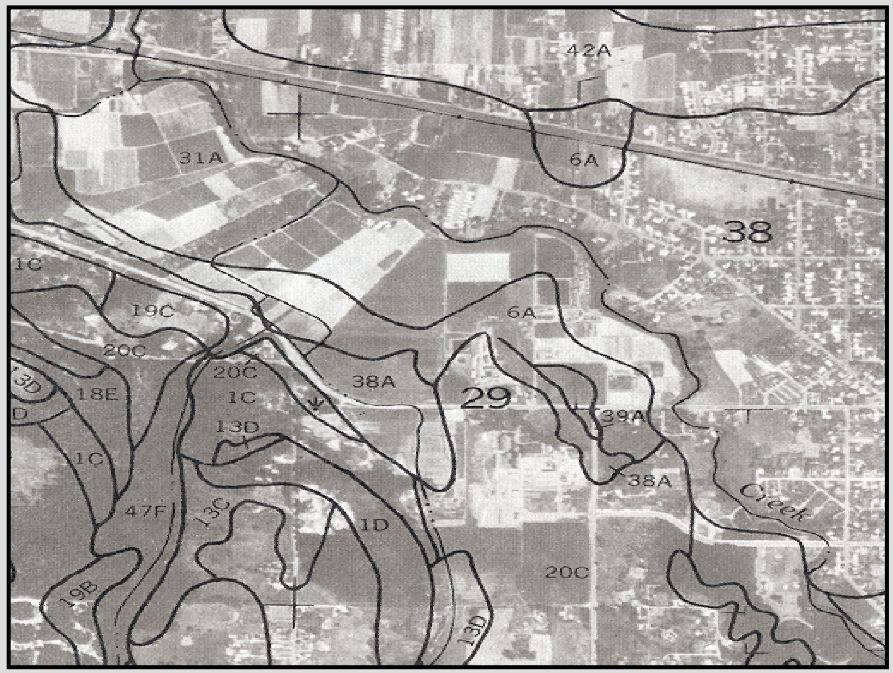


Soil Survey is a Scientifically-Based Inventory



A oil e incl de map , de c ip ion , p ope ie , clima e, and in e p e a ion . The e a e excellen o ce o in o ma ion.

Abo 3000 co n ie in he Uni ed S a e ha e a oil e .



Soils Have Limitations Which Must Be Understood

Conce n o li e and p ope ie

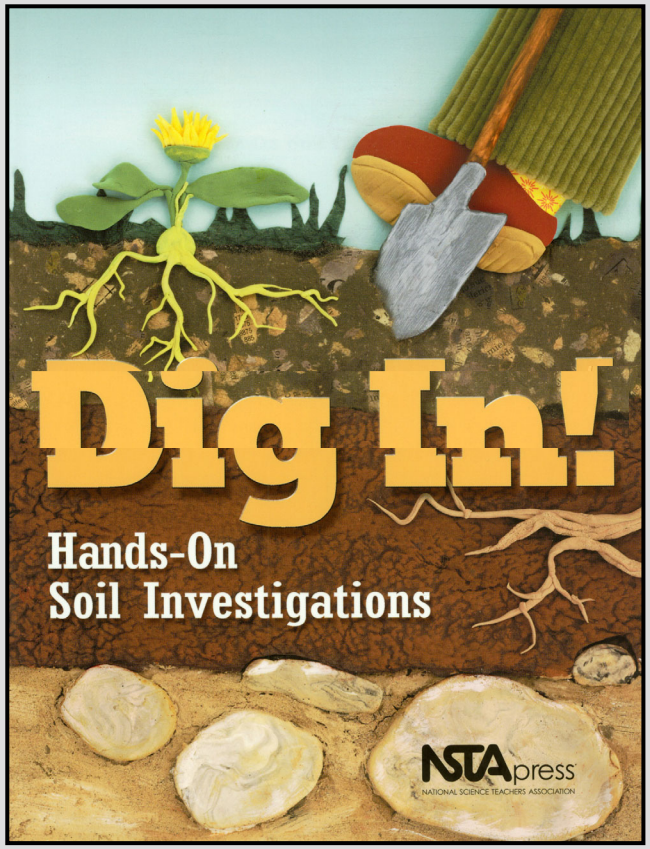
allergies
corrosivity
dust
flooding
gypsum dissolution
piping
rapid runoff
sand blowing
septic failure
sinkholes
soil borne disease
sulfidic materials
water tables
contaminants
crop loss
erosion
frost action
liquefaction
radon
salt build up
sedimentation
shrink-swell
slope failures
subsidence
urban hydrology

Scientific Names for Soils Reduce Ambiguity

- Like plants and animals, **oil a e cla i ied**
- The **em** is called **Soil Taxonom**
- The **highe le el** is the **oil o de** (12)
- The **lowe le el** is the **oil e ie** , often a place name

Soil O de	**Fo ma i e e m**
Alfisols	Alf from combination of al (aluminum) and f (ferrous) iron
Andisols	Ando from Japanese term dark referring to dark volcanic ash
Aridisols	Latin, aridies, dry arid
Entisols	Ent meaningless, root recent
Gelisols	Latin gelare, to freeze
Histosols	Greek, histos, tissue
Inceptisols	Latin, incepum, beginning, inception
Mollisols	Latin, mollis, soft, mollify
Oxisols	French oxide
Spodosols	Greek spodos, wood ash
Ultisols	Latin ultimus, last, ultimate
Vertisols	Latin verto, vertical cracking

Soil Science Can Be Usefully Incorporated Into Other Studies



Science

ecolog , biolog , chemi

Social S die

wo ld ade, land e

Ma hema ic

oil lo o e one hec a e

Hi o

e lemen o he U.S., d bowl

A

oil c a on , ac lic pain